

WHAT IS CLAIMED IS:

5            1.    In a receiver that recovers a digital VSB signal,  
a method for detecting the phase of the recovered digital  
signal comprising:

             forming from the recovered digital signal a first data  
stream and a second data stream comprising a Hilbert Transform  
10       pair;

             generating a third data stream that represents tentative  
decisions from the first data stream;

             comparing the first and third data streams to generate a  
symbol error signal;

15           combining the symbol error signal and the second data  
stream to form a phase error signal; and

             coupling the phase error signal to a VCO to reduce the  
phase error signal.

20           2.    The method of claim 1, in which the symbol error  
signal is delayed before combination with the second data  
stream.

             3.    The method of claim 2, additionally comprising  
25       equalizing the third data stream and combining the equalized  
third data stream with the first data stream prior to  
generating the third data stream.

             4     The method of claim 1, additionally comprising  
30       equalizing the third data stream and combining the equalized  
third data stream with the first data stream prior to  
generating the third data stream.

             5.    The method of claim 4, in which the second data  
35       stream is delayed by a given amount during formation of the

1       **51397/LTR/B600** - BP-1277-CON.2

first and second data streams and the the symbol error signal  
is delayed by the given amount before comparison with the  
5       second data stream.

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